

Claims

1. Volume flow control valve (36, 38) with a flow restrictor (48, 54) that can be displaced axially in a housing (40, 44), via which the volume flow can be diverted,
5 characterized in that the flow restrictor (48, 54) has a diverting body (54) and the force generated by the diversion at the diverting body (54) is used to adjust the flow restrictor (48, 54).
2. Volume flow control valve (36, 38) according to Claim 1, characterized in that the
10 contour (56) of the diverting body (54) is designed so that the largest possible adjusting force is yielded with the lowest possible flow resistance.
3. Volume flow control valve (36, 38) according to Claim 1 or 2 with a flow restrictor
15 (48, 54) that has a control cylinder (48) that is flowed through axially with a base part (54) serving as a diverting body, in whose area radially directed control openings (50) are provided in the control cylinder (48), which cooperate with a control edge (60) in the housing (40, 44), whereby a spring (72) loads the flow restrictor (48, 54) against the flow direction (70) of the volume flow, characterized in that the base part (54) has a contour (56) projecting into the control cylinder
20 (48), via which the volume flow is diverted to the control openings (50).
4. Volume flow control valve (36, 38) according to Claim 3, characterized in that the
25 contour (56) is flush at its outflow side and approximately tangentially adjacent at the control openings (50).
5. Volume flow control valve (36, 38) according to one of the preceding claims, characterized in that the flow restrictor (48, 54) during its movement dips into a housing-mounted guide cylinder (62), which has a control edge (60) on its end facing the flow restrictor (48, 54), which in its functional position more or less
30 covers the control openings (50).
6. Volume flow control valve (36, 38) according to Claim 3, characterized in that the guide cylinder (62) has a pressure compensation chamber (74), which is connected via a pressure compensation bore hole (66, 68) to an inflow side and/or outflow side of the volume flow control valve (36, 38).

7. Volume flow control valve (36, 38) according to one of the preceding claims, characterized in that the inner contour of the control cylinder (48) runs conically towards the contour (56) of the base part (54).
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8. Volume flow control valve (36, 38) according to one of the preceding claims, characterized in that on the inflow side the control cylinder (48) has a collar (52) projecting radially outwardly on which a spring (72) is supported.
10. 9. Volume flow control valve (36, 38) according to one of the preceding claims, characterized in that the spring (72) has a flat characteristic curve and the control openings (50) have a slight extension in the movement direction of the flow restrictor (48, 54).
- 15 10. Volume flow control valve (36, 38) according to one of the preceding claims, characterized in that the housing (40, 44) is designed to be two-piece, wherein a parting line (46) runs essentially transverse to the movement direction of the flow restrictor (48, 54) and is sealed towards the outside.
- 20 11. Volume flow control valve (36, 38) according to Claim 10, characterized in that the upper housing part (40) and the lower housing part (44) each have a hose connection (42).
- 25 12. Volume flow control valve (36, 38) according to one of Claims 1 through 7, characterized in that it is integrated into the cooling jacket (80) of a machine (26) or a component (28).
- 30 13. Volume flow control valve (36, 38) according to one of the preceding claims, characterized in that, in a heating/cooling cycle of a motor vehicle, it regulates the volume flow of a branch line (84) of the heating/cooling cycle.